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REGIONAL ANATOMY IN ITS RELATIONS TO MEDICINE AND SURGERY.

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No. 1.

In order that a description and comprehension of the body in its relations to medicine and surgery shall be clear, it is necessary to adopt some general divisions of our subject. The contemplation of the human form very naturally suggests one which has been long recognized by writers, viz. that into the *head, neck, trunk and extremities*. These again admit of being divided into smaller territories, usually denominated *regions*. The external characteristics should form the first subject of examination. The soft parts being laid upon an unyielding base, (the skeleton) to a great extent assume its form; hence the prominences and depressions which appear over the surface become invaluable to the surgeon, serving as undeviating landmarks, whereby to guide his knife or determine the nature of accidents. The importance of a thorough study of the human superficies cannot be too strongly insisted upon. Every part has its proper normal physiognomy, and it is only when this is really recognized that alterations can be properly appreciated. Especially does this truth apply with ten fold force when considered in relation to the articulations of the body. The vertebral column, the centre of the skeleton,

has attached to its superior extremity the *head*. This consists of two portions, the *cranium*, a hollow chamber for the accommodation and protection of that large mass of neurine, the *cerebral axis* or centre, and the *face* for the organs of sense. It is this region which shall form the subject of the following paper. The simplest division of the cranial region, and sufficiently accurate for every practical purpose, is into a *superior* or arch, an *inferior*, and two *lateral* regions.

The *superior region* will be circumscribed by lines connecting the following topographical points. Commencing at the nasal tuberosities at the root of the nose, and following the upper margin of the orbits to their outer termination or external angular processes; from thence along the temporal ridges to the mastoid processes of the temporal bone, and thence to the external occipital protuberance on the occipital bone.

Fig. 1.

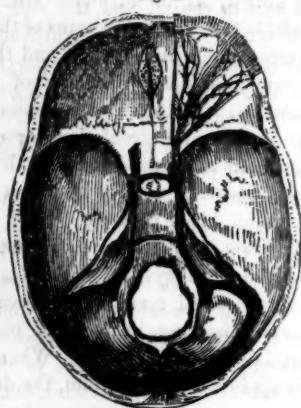


The *lateral region* will be indicated by taking the curved line of the last corresponding to the temporal ridge as the anterior, superior and posterior boundaries, and connecting its extremes by a base line, extending from the outer part of the orbit along the zygomatic

arch to the posterior part of the mastoid prominence of the temporal bone, as the inferior boundary. The form of this region is that of an arch resting on a base. The lines exhibiting these two regions in profile will be seen in Fig. 1.

The Base, or Inferior Region.—If a section should now be carried through the cranium, corresponding to the supra-orbital ridges, zygomatic arches and occipital protuberance, all below such section would form the *base* of the cranium. Fig. 2 represents this section.

Fig. 2.



Each of these regions presents two surfaces, an *external* or cutaneous, and an *internal* or cerebral. Over the former is placed the scalp, the anatomical constituents of which will be described in their proper order. When it is considered that the cranium is entrusted with the high office of accommodating and protecting the brain, we might naturally expect to find an amount of functional adaptation, corresponding to its importance. Every constituent external to the encephalon, including scalp, bone, membranes and fluid, while it has its own individual specific function to discharge, contributes also in some degree towards the office of cerebral preservation, and while the effect of the various parts separately may be apparently unimportant, yet the result of their combined action is very great and indispensable. Let us first notice some of the most prominent connected with the osseous framework of the cranium.

When the nervous system reaches a certain degree of elevation in the developmental scale, there is provided a simple cartilaginous tube, or one of segregate parts, placed along the axis of the body constituting the vertebral column, in which is lodged the spinal cord. The presence or absence of this structure is the foundation for the erection of the animal kingdom into two great divisions, the *vertebrata* and *invertebrata*. As we continue to rise in the animal scale, do we find additions, developments and modifications, from the upper extremity of this spinal cord, little by little, until it reaches a bulk and perfection corresponding to the human brain, and forming with the cord the cerebro-spinal axis. The foraminae, which give exit to the spinal nerves, are in serial relation to those which transmit the cranial nerves, and the membranes which surround the spinal centre extend so as to compass the cerebral centre. At the inferior or pelvic extremity of the spine the resemblance of the sacrum and coccyx (though formed of solid pieces) to the other parts of the vertebral pillar, cannot have escaped the notice of the most superficial observer; hence the name *false vertebræ*. Proceeding on the above facts, since the days of Peter Frank, anatomists have been disposed to look for corresponding analogies between the pieces composing the cranium and vertebral column, and hence we speak of the *cranial vertebræ*, or, according to Cuvier, *cranial zones*. The cranium consists of eight separate pieces, which, by this homologous interpretation, form a certain number of vertebræ, having all the elements expressed, either in a maximum or minimum degree, of the other pieces of the spinal column, and only departing from their obvious family affinities in appearance rather than fact, in correspondence to the great magnitude of the cerebral ganglia. These several pieces are connected by sutures, most of which are serrated, some beveled or scale like, and having interposed an encrustation of cartilage. The mechanism resulting from such an association of parts is well calculated to decompose a force applied to the head, by scattering its vibrations among the serrations of these sutures, and

proves likewise an efficient means of limiting the extension of fractures. The general mathematical form of the cranium, being rotund, is that most favorable to the diffusion of force, upon well known philosophical laws.

The composition of the bones present us another beautiful provision, tending towards the same great end. They are tabular, being made up of three superimposed laminae, each differing in texture, and of course in their capacities for vibratory conduction. The external layer or table is tough, and exhibits in its linear elevations a fibrous appearance; the internal table is smooth and very hard, often called the vitreous layer, and the intermediate one, composed of large open cancelli, forms the *diploe*. By the time, therefore, that an impulse communicated to the head passes through the first layer, scatters its momentum through the cells of the second, and traverses the third, its power to injure the cranial contents has been very greatly diminished. The ingenious and conclusive experiment of Dr. Physic, familiar to every student of anatomy, with a series of balls, one of which being made of cancellated bone, is alternately interposed and withdrawn, with a view to demonstrate the influence of a physical arrangement of particles upon forces, will convince the most ignorant of the value of introducing such a material as the diploe into the cranial walls. There is probably no better place than the present to introduce one or two practical deductions based upon such structure. *First*—a depression of the external table does not necessarily impose an encroachment upon the cranial chamber, as such depression may exist at the expense of diploic condensation. *Second*—there may be a fracture of the internal table, with or without compression, without any structural solution in the continuity of the external layer, for the reason that the former is much more brittle than the latter. In a case which I was compelled to trephine at the Philadelphia Hospital, some time since, a very good exemplification of this fact was seen, in the existence of a beautiful stellate fracture of the internal, without any fissure of the external table.

In this diploic structure, thus enclosed, there exists a very intricate plexus of blood vessels, more especially of veins. The walls of these veins or sinuses are extremely thin, and depend very much for their strength upon the bony channels through which they ramify. In the very young subject they, as well as the diploe itself, are by no means so well marked as in adult life: the former being exceedingly numerous, but of very small calibre; the latter imperfectly developed. Each bone has a system of its own, so long as they remain distinct; but form communications when they become united, as in advanced life. They communicate freely with the veins of the scalp, the sinuses of the dura mater, and the meningeal veins, and are destitute of valves. Their relation, structure and communications with the intracranial circulation serve as diverticula when it is over-distended, thus exercising a conserving agency by preserving an equilibrium of blood pressure. Such a direct communication between the intra and extra-cranial blood vessel system, should lead us to expect very decided results from local blood letting and blistering, in cases of meningeal or encephalic inflammations. When a trephine is applied to the cranium, the diploe informs the surgeon of his progress by the free hemorrhage which wells up when the instrument reaches its vessels.

If the surface of the cranium be examined, it will be seen to present certain parts more exposed than others, and therefore more likely to receive blows. These are in front, behind, and on the sides. To compensate for such exposure, arches and abutments are wisely provided. Thus, by reference to Figs. 1 and 2, *ridges*, in front, will be seen running from the root of the nose outwards along the upper part of the orbits; higher up, the *frontal eminences*; behind, the *occipital protuberance*; inside, the *crucial ridges*; and on the sides, the *temporal ridges*.

The articulation of the head is full of instruction. It is connected to the vertebral column through the occipital bone with the atlas and axis, and, as seen in Fig. 3, a very large portion appears to be in front of its pillar

of support. So far as volume is concerned this is true, but in respect to weight it is very

Fig. 3.



nearly balanced, preponderating, however, somewhat forward, as is seen when the chin

drops upon the breast in fainting, death or sleep. The connexion between the head and the vertebral column admits of flexion, extension, rotation, abduction, adduction and depression.

The first two are effected by the connexion between the condyles of the occipital bone and the atlas, and when violence is applied in front or behind, and there is no resistance other than the simple inertia of the head to overcome, it will recede so as to diminish the force of concussion.

The second movement, or rotation, results from the atlo-axoid connexion. If now the side of the head be exposed to a blow, in front or behind the line of support or centre of gravity, it will spin round upon its axis like a top.

The third movement I have called *adduction* and *abduction*, and can only occur at the expense of the spinal column. To admit this there are placed between the lawinæ of the vertebræ elastic ligaments—the ligamenta subflava. If now the force be received at the centre of gravity, it cannot retreat by rotation, but only at the expense of the spine, which it does in consequence of these ligaments.

The fourth movement, or depression, follows from the cartilaginous discs between the bodies of the vertebræ, which serve as elastic cushions, allowing the bodies to be driven together. This is exceedingly important; for when a force is applied upon the top of the head, the top of the spine is the point of resistance, and even the slight condensation of that column goes a great way in preventing fractures at the cranial base. When a force is communicated to the spine from the other extremity of the body, as when an individual falls from a height and lights upon his feet, the occipital condyles become the point of resistance, and in addition to the organization of the column already mentioned we have a large amount of cancellated tissue, and several curves, to neutralize and decompose the vibrations.

As the brain is symmetrical, consisting of two halves, so the cranium which encloses it is likewise a duality. The line of

this separation is seen in the *frontal* and *sigmoid* sutures, which may be regarded as one under the name of the *median*. The anterior portion, that connecting the two halves of the frontal bones, disappears in early life in the great majority of cases. In this suture, up to a period varying from two to four years, membranous spaces exist called *fontanelles*, forming important cardinal points with the *accoucheur* to determine the position of the fetal head in the pelvic cavity. The *anterior* one is the larger, *quadangular* in form, and is placed between the angles of the frontal and parietal bones: the *posterior* one is triangular, and placed between the angles of the parietal and occipital bones. In a skull now before me, three of these spaces exist, and all in this median suture. In hydrocephalic skulls these spaces are very large, and the sutures very wide asunder. The anterior fontanelle offers a very good point to tap the ventricles, in cases where, from dropsical accumulation, that operation becomes imperative, and should be entered on one side of the median line, for reasons to be hereafter mentioned.

Besides this median, there are the *coronal*, *lambdoidal*, with its two branches, and the *squamous* sutures, with the position of which it is presumed the reader is acquainted. In the lambdoid frequently, and occasionally in the other sutures, there exist little osseous islets, which having, it is believed, been first described by Wormius of Copenhagen, are called Wormian bones. They do not exist until six or seven months after birth. Sometimes they are let in, as it were, to the depth of the external table and diploe, resting on the vitreous layer, but more generally have all the layers of the other bones. The chief practical point connected with their existence is not to confound them (as is said to have been done) with fractures.

As age advances the sutures frequently all become closed up, so that the cranium becomes almost a single piece, a hollow shell, and of course less suited by the change either to defend itself from extensive fractures, or its contents from violent concussions. So, also, in the aged we have diminution in the thickness of the cranial walls, con-

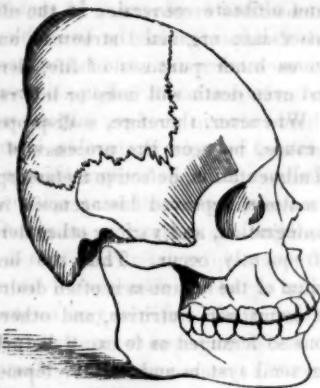
stituting *senile atrophy*, which may be either very circumscribed or general. In such cases the diploe disappears, and the two tables approximate each other until the bones become very thin and translucent. For this reason, in part, blows that in younger subjects would pass harmless, may do irreparable injury in the old, and should make the practitioner cautious in committing himself to an opinion.

Long continued attacks of neuralgia of the nerves of the scalp sometimes, it is said, produce a wasting of these bones. I think it will be found that the thinning of the cranial walls generally corresponds to that portion where the scalp first becomes bald. Certainly there, under such circumstances, the blood-vessel supply would be diminished. *Hypertrophy* is frequently observed. Only one variety shall be mentioned in this place, as we need yet for the elucidation of others a farther advance in the demonstration of structure. That to which I refer takes place in cases where there occurs atrophy of the brain. A very beautiful example of this variety is figured in Mr. Paget's work on surgical pathology—a similar specimen of which is in my own collection. In such cases the internal table follows the receding brain, not by becoming thicker, but by an expansion of the cells of the diploe, so that the latter appears to be very greatly increased in thickness.

Alteration in form.—We do not propose to speak of those which are typical of race. Those to which we refer are generally due to mechanical causes. Some of these operate from without. Thus, where there is a disproportion between the fetal head and the pelvis, or where the forceps become requisite to extract a child, the great mobility of the bones may admit of their becoming so changed in their relations to each other as to be termed out of shape. Time generally corrects such deviations. Or it may be a change of form, produced by long continued mechanical pressure, as practised by certain nations, as represented in Figs. 4, 5 and 6.¹

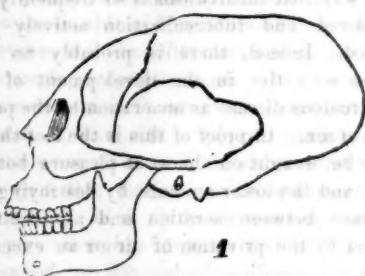
¹ Catalogue of Human Crania in the collection of the Academy of Natural Sciences of Philadelphia. By J. Aitken Meigs, M. D., etc., etc., to whose courtesy I am indebted for the use of the three following cuts.

Fig. 4.



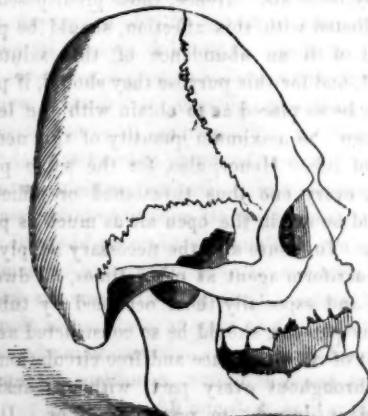
Natchez Indian.

Fig. 5.



Kowalitsk Indian of Oregon.

Fig. 6.



Indian Cranium (Chilian).

Then again there are causes acting from within, as an excessive development of the

brain, or what is more frequently seen, hydrocephalus. This has been described as a hypertrophy, but the term can scarcely be considered as accurate, for while the superficial area of the skull is greatly increased, exceeding, in some cases, two feet in circumference, yet the weight or increment of the bones is not, being only expanded.

On Tuberculosis and its Treatment.

No. 6.

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2. *Air.*—To insure organization, or the normal transformation and vitalization of the alimentary matter, and to promote healthy disintegration and depuration, as well as the numerous other processes concerned in life action, a due supply of the elements of the atmosphere is required. As, therefore, these chemical or aeriform agents are essential elements of the economy, means are provided whereby the requisite quantity may be introduced therein and placed in such relation to its liquid and solid components as to promote most efficiently their intimate admixture and perfect combination. A knowledge, therefore, of the constitution and properties of the atmospheric air, and its relations to the living economy in both health and disease, is not only of much interest, but of great practical value. In order, therefore, to more fully appreciate these properties and relations, it will be necessary to examine them somewhat in detail. But as a minute investigation thereof is somewhat too extensive for our present purpose, we shall merely refer to some of those points which appear to be most intimately connected with the special subject of inquiry in which we are now engaged. The questions, therefore, in this connexion, which seem to be most worthy of special consideration, relate to the quantity, quality or purity, density, humidity and temperature of the air. In order, however, to obtain the most correct view of the subject in both its general and special aspects, and to arrive at just conclu-

sions, it will be requisite to examine these different conditions separately.

a. Quantity.—The quantity of the atmospheric air required for the various purposes of life is regulated by the size, activity and functions of the organism. In the normal state there is a due relation between the quantity of the alimentary matter and the quantity of the atmospheric air introduced into the body. This is in a definite proportion to the quantity of blood formed and required, the rapidity and character of the nutritive and disintegrative metamorphoses and depurative processes, and the nature, activity and functions of the organism. Hence it is just as essential for the purposes of existence that the economy should receive its due proportion of atmospheric air as of aliment.

The transformation of the food is essentially a chemical process, requiring for its perfection the elements of the atmosphere. A due supply of atmospheric air is, therefore, indispensable for the nutritive metamorphosis and perfect assimilation, and not only for these, but also for disintegration and depuration, and the various other processes connected with organization, as well as the higher and more ultimate purposes of life. There is, therefore, a definite and fixed proportion between the quantity and character of the food and the quantity and purity of the air, the activity and perfection of the alimentary transformation, histogenesis, disintegration, depuration, and other well known processes, and the general integrity, energy and activity of the entire organism. Indeed, all other things being equal, this relation between the quantity and character of the food and atmospheric air, and the vigor, regularity and perfection of the nutritive, disintegrative, and other indispensable processes of the economy, seems to be as definite and positive as that between the quantity of fuel and measure of air or draught required for its chemical modification and perfect combustion. Thus in reality, aeration seems to stand in the same relation to alimentation and life action generally, as the air or draught does to combustion and its attendant phenomena.

If, then, the economy does not receive its

due quantum of air necessary for the modification and ultimate conversion of the alimentary matter into organized structure, and for the various other purposes of life, derangement and even death will more or less rapidly ensue. Whenever, therefore, a disproportion is thus caused between the processes of aeration and alimentation, defective metamorphosis and haematoses, depraved histogenesis, imperfect disintegration, and various other derangements frequently occur. Thus the healthy equilibrium of the organism is often destroyed, and the haematoses, nutritive, and other vital operations so deranged as to cause disturbance of the general system and the development of various forms of adventitious matter, and especially that of a tuberculous nature. It is in this way that tuberculosis is so frequently engendered and tuberculization actively promoted. Indeed, there is probably no one cause so active in the development of the tuberculous disease as anaeration by the privation of air. In proof of this is the fact that it may be brought on almost at pleasure both in man and the lower animals, by destroying the balance between aeration and alimentation, either by the privation of air or an excess of food.

A prerequisite, therefore, to prevent or remove tuberculosis, is a full and free supply of atmospheric air. Hence, those predisposed to or afflicted with this affection, should be provided with an abundance of this salutary agent, and for this purpose they should, if possible, be so placed as to obtain with the least exertion the maximum quantity of this necessity of life. Hence, also, for the same purpose, every one thus threatened or afflicted should be out in the open air as much as possible. To insure also the necessary supply of this aeriform agent at other times, all dwellings, and especially those occupied by tuberculous persons, should be so constructed as to admit of an abundance and free circulation of air throughout every part, without causing sufficient draught to prove injurious. It is thus apparent, that for the preservation and restoration of health a due supply of air is of as much importance as that of aliment; indeed,

If anything, it is of more immediate consequence, as life can be longer continued without food than without air. Hence, as much if not more care should be taken to secure a full and constant supply of fresh, pure air, as there is to furnish the necessary quantity of food; for, in reality, as just intimated, life will be sooner destroyed by a privation of air than of aliment. In fact, starvation or its equivalent is just as positive in the one case as in the other, differing only in kind and degree.

In the tuberculous disease it is, however, often more easy to supply the requisite quantity of air than to introduce it into the body and cause its appropriation or the necessary chemical combination. For, in the first place, those organs through which aeration is principally effected are frequently so much diseased as to be incapable of performing their usual functions, and thus of furnishing the economy with its due quantum of air. In the second place, even when the air is introduced into the circulation, haematosis, cell action and general nutrition are often so imperfect, or so much in abeyance, that proper combination does not take place. In this way a process of more or less gradual asphyxiation, as well as of actual starvation, is often going on, though in most cases this latter difficulty of anaeration by deficient combination does not in general become so predominant until a more advanced state of the disease, when the systemic temperature and vital forces sink below that point requisite for the proper degree and character of chemical action essential to organic metamorphosis, general nutrition, disintegration, and the various other necessary processes of life.

This state of asphyxiation is, however, usually so apparent, even from the beginning, that it has attracted general attention; and, as a consequence, various means have been resorted to, to obviate the evils resulting therefrom, and, if possible, thereby remove the disease altogether, prominent among which is forced or voluntary respiration. Though founded upon correct principles, this procedure is, in the main, of doubtful propriety. Nevertheless, in the first stage of tuberculosis, before the pulmonary organs are infiltrated with tuberculous

matter, it may prove of sufficient benefit to restore the equilibrium of aeration and the normal condition of the general system.

But when, after tuberculization, these organs are charged with this adventitious matter, it is a very doubtful measure, because, in the first place, it is unnatural, and cannot be kept up for a sufficient length of time and degree of regularity to supply the requisite quantity of air and preserve or restore the equilibrium of aeration; in the second place, it is so fatiguing to the mind and body as to unduly tax and greatly exhaust their energies. But besides these, a still greater objection is that it is absolutely injurious and destructive of the pulmonary organs themselves, as it unduly exercises and overtaxes them while in a diseased and disabled state, and thus promotes their more rapid infiltration and disintegration. Nevertheless, as a due proportion of the atmospheric air is essential to the preservation and perfection of the various processes of aeration, alimentation, disintegration and depuration, and other important functions necessary for the continuance of life and restoration of health, a sufficient quantity of it or its elements must be introduced and combined in order to meet the wants of the economy. Various modes may be adopted for this purpose, the principal and most important of which will be noticed hereafter.

b. Quality or purity.—It is not only requisite to supply an adequate quantity of air to the economy, but that it should be of good quality, and hence both fresh and pure. Impure and vitiated air of all kinds and degrees is more or less active in the production of tuberculosis, as well as many other forms of disease, and necessarily injurious in aggravating it or them when they already exist. The necessity for an abundance of fresh and pure air to prevent or remove this disease, is therefore so apparent that it is scarcely necessary to further urge its importance. Hence, every process or source of impurity capable of modifying or contaminating the air respired by those afflicted with, or having a tendency to the tuberculous disease, should be carefully avoided, and, if possible, removed. The air

may, however, be contaminated from within as well as from without, and often is, by the morbid exhalations from the pulmonary organs themselves. In this condition measures should be taken to purify the system, and neutralize or destroy, as far as possible, the poisonous matter which is thus being so constantly generated and absorbed. For this purpose various agents may be resorted to, and employed both internally and externally, to which a more particular reference will be made at another time.

c. *Density.*—Another point of much interest in its relations to tuberculosis is the density of the air. It is well known that this varies in different parts of the globe, and also in the same region, according to the distance from its surface and the level of the sea. Besides these there are many frequent and sometimes sudden variations of density caused by meteorological and other influences. The influence of the density of the atmosphere upon the vital economy is very great, and has necessarily a very important bearing upon the vigor and intensity of life action. As a general rule, this varies according to the degree of density. All other things being equal; then, the greater the weight or density of the atmosphere, the greater the vigor and activity of life and capacity of the organism; and conversely, the more rare and less dense it is the less the vital intensity and energy. Life can, however, be supported in a somewhat rare as well as in a dense atmosphere, as within certain limits man and other animals have a definite range and capacity of existence. Also a certain capacity of endurance with regard to the fluctuations of density, though sudden changes thereof are usually more injurious than the more gradual ones, even if somewhat extreme, as the system has time and capacity to adapt itself to this modified condition of the atmosphere.

In its special relations to the disease under consideration, it does not appear that mere density alone has that intimate connexion with tuberculosis that *a priori* conclusions would lead us to believe. Observation has shown that this disease is not only somewhat infrequent, but even sometimes unknown in coun-

tries in which the air is of different degrees of density, and especially in some of those in which it most nearly approaches its minimum, as well as in those nearest its maximum density. While, therefore, it is obvious that an air materially rarefied would deprive the system of its due proportion of that essential element, and thus aid in the development of tuberculosis, it is thus shown that it does not necessarily occur as a consequence. Hence, as the deficiency would be in proportion to the tenuity, there must be some compensatory action in order to preserve the equilibrium between aeration and alimentation, and the other functions of the body. This consequent deficiency of the air is, therefore, doubtless compensated for by the greater exposure to its influence, more frequent respiration, and more active nutrition, disintegration and depuration, because this rare condition is so generally associated with other states of the atmosphere that promote these and other processes, and encourages those habits of life which produce a state of health antagonistic to this affection. While, therefore, the density of the air does not, *per se*, appear to be so intimately connected with the tuberculous affection, it undoubtedly exercises more or less influence in its development, and, *cæteris paribus*, it occurs more frequently in a light or rare than in a heavy or dense air. Hence, all other things being equal, the use of a dense air is preferable to a light one in the prevention and treatment of this disease.

d. *Humidity.*—The influence of a humid state of the atmosphere upon the animal organism is a matter of common observation. Its effects are, in the main, depressing and injurious. These effects are sometimes strikingly shown, and its relative influence may be traced through the different degrees of moisture from comparative dryness to more or less complete saturation. It checks cutaneous and pulmonary transpiration, and secondarily diminishes cell action and nutrition, retards capillary and general circulation, modifies hematosis, impedes absorption, impairs digestion, and thus interferes with and deranges formative and disintegrative metamorphoses, aeration, excre-

tion, and other essential functions, and causes general relaxation and inanition. Unless, therefore, the renal, hepatic and intestinal emunctories become sufficiently active to compensate for the deficiencies of the skin and lungs, derangement of various kinds and degrees ensue. These derangements often give rise to tuberculosis. Humidity of the air thus exercises a powerful influence in the production of this disease. In fact, it is one of the most active and frequent causes of its development. It is, in the main, very prevalent and destructive in all moist atmospheres of every degree of temperature, from hot to cold. On the other hand, a dry air, of all degrees of temperature, is, in general, both preventive and curative of phthisis. It comparatively rarely occurs, and is even unknown, while it is frequently removed where this latter condition of atmosphere prevails. As a general rule, therefore, a dry atmosphere, of all degrees of temperature, is most useful for the prevention and resolution of this disease. In some cases, however, characterized by irritability of air passages and impressibility of general system, a somewhat moist air exercises a more beneficial influence, for a time at least, and should therefore be preferred.

e. Temperature.—This condition of the air, in its relations to the disease in question, is also of much interest and great practical value. It is found by observation that, *per se*, the temperature of the atmosphere of every degree compatible with life, from the most intense heat to the severest cold, acts upon the animal organism in a manner apparently antagonistic to that condition which gives rise to the development of tuberculosis. This view is in opposition to former convictions on the subject, but its correctness is established by the fact that phthisis is almost if not quite unknown in both very warm and very cold climates, as well as in those of intermediate grades of temperature. It is also shown by the fact that it is often removed by a sojourn for a shorter or longer period of time in places of different degrees of temperature, from the highest to the lowest, and in both extremes. Of the different degrees of temperature, that

approaching the low rather than the high seems to be most beneficial in the prevention and resolution of this disease, and the preservation and restoration of the healthy integrity and energy of the economy. Hence, as a general rule, a somewhat cold rather than a warm atmosphere is most desirable, and should be preferably sought by those threatened or afflicted with the tuberculous affection. A somewhat equable is, however, more beneficial than a very variable temperature, though usually a prolonged exposure to a limited range is not so salutary as a greater diversity. The selection in this, as in all the other conditions of the atmosphere, must, however, be influenced by the peculiarities of the particular individual, the stage, type, intensity, and complications of the disease, and other considerations.

General Conclusions.—The following propositions seem to be legitimate deductions from our present knowledge on this subject.

1. That the quantity of the air required for the wants of the animal organism is in due proportion to its size, energy, activity and functions.
2. That this quantity is definite and fixed, and in relative proportion to the quantity and character of the food, rapidity of the nutritive and disintegrative metamorphoses, and activity and perfection of depuration.
3. That thus aeration and alimentation, disintegration and depuration, are in intimate dependence upon and close relation to each other.
4. That a deficiency of air or an excess of food, or a disproportion between the quantity of alimentary matter and atmospheric air introduced into the economy is a very active and frequent cause of tuberculosis.
5. That conversely this disease is a frequent consequence of the derangement of disintegration, alimentation and aeration from imperfect depuration.
6. That hence for the prevention, amelioration or resolution of this disease, the relative proportion between the food and air, and the due relation between aeration and alimentation,

disintegration and depuration must be preserved or restored.

7. That for this purpose there must not only be the requisite quantity of air, but that it must be fresh and pure, as impure and vitiated air are very frequent and potential causes of phthisis.

8. That therefore a constant and full supply of fresh and pure air is an indispensable prerequisite for the prevention and successful treatment of this affection.

9. That in the main a somewhat equable is better than a very changeable atmosphere, though it should be sufficiently variable to cause a free circulation and general purification of the air.

10. That a heavy or dense air is much more active in preventing or resolving the tuberculous disease than a rarefied or light air.

11. That a moist air of every grade of humidity and degree of temperature is more or less active in the production and acceleration of this disease, though a moderate amount of humidity is sometimes protective and partially sanative.

12. That a dry air of every degree of temperature exercises a powerful influence as a preventive and curative agent in this affection.

13. That the temperature of the air is, *per se*, very potential in preventing, mitigating and resolving the tuberculous disease, though in general a cool is much more beneficial than a warm air. They may, however, be occasionally alternated with advantage.

14. That this potentiality of temperature is demonstrated in part by the fact that tuberculosis is not only infrequent, but even unknown, in climates of different degrees of temperature, and in both extremes of hot and cold.

15. That, *ceteris paribus*, therefore, an abundance of pure, dense, somewhat equable, cold, dry air, is most useful in the prevention, mitigation and resolution of the various forms and degrees of tuberculosis.

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There will be an election at the meeting of the Board of Guardians of the Poor, on Monday afternoon next, of Assistant Resident Physicians for the Philadelphia Hospital, to supply vacancies.

Pancreatics.

BY GEO. W. LAWRENCE, M. D.,
of Catonsville, Md.

For several years I have carefully looked for some satisfactory essay on the pancreas—its office, diseases, symptoms and remedies. The healthy action of the pancreas is very important to the animal economy. Its agency in the process of digestion is plainly marked, and its derangement distinctly defined. Digestion is a chemico-vital action, under the nerve force of the ganglionic system, and controlled by temperature. The food, partly moistened by the salivary fluid and glands of the mouth, after deglutition, is acted on in the stomach by the gastric fluid in digesting the mass (especially the fibrine, albumen, caseine and protein compounds) into chyme. The next agency takes place beyond the stomach—intestinally, where the chymous mixture mingles with the pancreatic fluid and bile. There we find digestion of the fatty, farinaceous and non-nitrogenous material (suitable for nutrition) formed into chyle, and the undigested part precipitated or separated as fecal matter.

Organically, the pancreas is liable to inflammation, acute and chronic; hypertrophy, atrophy, induration, softening, melanosis, carcinoma, tuberculosis; fatty, calcareous and cartilaginous degeneration; also, obstruction of its ducts.

Functionally, we find hyperæmia, anæmia, circulatory congestion, and excessive, deficient and vitiated secretions.

The organ is carefully and securely masked in position within the curve of the duodenum; it is supplied with *secretory* nerves, derived from the semi-lunar ganglion and great solar plexus. These nerves should be called the *pancreatic plexus*. The pancreas has no nerves of sensation; yet the relation of parts is such that in disease we find mechanical disturbances about the spine, duodenum, pylorus, spleen, and surrounding parts, that do produce sensible feelings. You find the anatomy of expression distressed, headache, dyspnoea, skin dry, dyspepsia, great sense of fullness an hour or more after meals, oppressed inspiration when prolonged, pneumatoxis, orthopnoea, cir-

culation embarrassed, with aortic pulse over the epigastrum, pain above the kidneys and under the right scapula. Again, we find the nerves of the respiratory centres involved.

The tongue, as an index, is ever our best guide in all diseases of the digestive forces, organic or functional, and it is an important diagnostic in derangement of the pancreas. We find an *unnatural pallor of the tongue in all organic affections* of this organ, and generally a *change in its volume*. You perceive also in all *functional disturbance a flattened, diffused, pasty, white, viscid tongue*; sometimes only furred, with a *white glairy coating*; again you may find a clear white *slimy* condition, without change in bulk. This morbid state of the unruly member should be known as a *pancreatic tongue*.

The healthy functions of this gland is of great moment to the practitioner in incipient phthisis, and when we have in conjunction defective salivary secretions to aid a diathesis in provoking gouty developments. Diabetes I fancy oftentimes produced by mal-secretion of the pancreas; and through vicarious offices, I think it imposes fatty degenerations on the liver and on the kidneys. In chronic intermittents, typhoid, typhus fevers, and chronic dysentery, it plays a part.

Excess in food or drink will create disturbance in the pancreas. Some years ago I discovered (in a hot climate) that fat meats, fat game, fat fish (salmon), speedily produced derangement. No doubt rich gravies, sauces, fats, cod-liver oil, and all other oils, *in quantity*, will abuse the functions of the gland. Tomatoes, asparagus, dandelion, cauliflower, peas, luscious fruits, rich oily nuts, wines, malt liquors, and all alcoholic drinks, will stimulate the pancreas.

Numerous experiments have shown the action of the pancreatic fluid and the salivary fluid on starch. I notice that Dr. Nunn, of Savannah, Ga., has recently prepared and recommends the starch mixture with pancreatic juice in dyspepsia. He calls the mixture "*pancreatin*." I think it will act as a *pancreatic* and sialogogue, and prove valuable in many diseases of the chylo-poietic viscera.

Cod-liver oil, glycerine and pepsine I hold as good agents of this class of organic remedies, in chronic derangement, where we have deficient secretion or functional debility.

What medicines will act on the pancreas? I feel satisfied that we possess a large class of agents; all of the sialogogues are *pancreatics*, and will partly stimulate this gland. Many of the alteratives will arouse the pancreas. I am convinced that the mercurials, arsenic, iodine, iodides, podophylin, colchicum, burdock, mur. ammonia, the oxides of manganese, bismuth, chlorate of potassa, cyanuret of potassium, phosphate of ammonia (and nearly all the phosphates), table salt, infusion of clover seed (a powerful sialogogue), all have more or less *pancreatic agency*. When we find excessive flow of pancreatic fluid (known by the stools), nitrate of silver, *in large doses*, alum, nitro-muriatic acid and the mineral tonics I have found desirable agents. I should also imagine the ammonio-ferric alum worthy of trial in the latter state.

Case of Amaurosis successfully treated by Strychnia.

By F. S. JAQUETT, M. D.,
Of Philadelphia.

In the summer of 1854 my attention was directed to a case of amaurosis of twelve months' standing. The patient was a child about twelve years of age. The disease followed, and was apparently caused by a blow from a stone upon the head. Shortly after this accident, her sight, which had been previously good, began to fail. At the time that I first saw her, vision was entirely lost. The eyes had that unsteadiness and rolling motion common to amaurotic patients. This condition, as I have before stated, had existed for one year, during which time treatment had been resorted to, the nature of which I am ignorant of, except that she had been profusely ptyalized; no beneficial results, however, followed the treatment. I at first treated the case by cups applied to the temples and nape of the neck, followed these by blisters, and purgatives were also freely used. Finding

that no benefit was derived from these means, I concluded to try the use of strychnia. I commenced cautiously and with small doses at first, administering only the one thirtieth of a grain three times a day. After using the remedy in this dose for two or three days, the quantity was slightly increased daily, until spasmodyc twitchings of the muscles occurred. I then reduced the dose, and in a day or two again increased it, until these symptoms reappeared. After this course had been pursued for about two weeks, the mother of the child stated to me that she thought that some improvement had taken place, as the child moved about the house with much more facility than formerly, and depended less upon her sense of touch. Owing to the imbecile condition of the mind of the child, I could not depend much upon her statements. I may also mention that the pupil which had previously been so dilated that the iris was almost reduced to a mere ring, became much reduced in size.

After a short time the improved condition of vision became manifest; the child could discern objects and walk up to them. When told she would go up to the dog or cat. She began to see smaller objects, and would readily pick up small pieces of money placed on the floor. This improvement continued until her sight was perfectly restored. The treatment occupied a period of about three months.

I saw the patient about one year subsequently, and there had been no relapse.

Illustrations of Hospital Practice.

PENNSYLVANIA HOSPITAL.

Service of Dr. Neill.

WEDNESDAY, MARCH 30TH.

Reported by T. A. Demme, M. D.

Fracture of the Skull—Post Mortem.—This specimen affords an illustration of certain injuries consequent upon a direct blow upon the head. Upon the external surface of the calvaria there is, a little to one side of the median line, and somewhat posterior to the apex of the head, a marked depression.

In the evening of the day that the injury was inflicted, his skin was pallid, the pupils contracted

and turned in one direction, the breathing quick and hurried.

Upon introducing the finger into the wound, notwithstanding his dying condition, the patient gave manifestations of suffering pain.

In addition, there was an exudation of a serous fluid from one ear.

I mention these symptoms in order that you may see the connection between the injury and the symptoms.

He had not all the symptoms of compression, nor of concussion. You do not always find these as described in the books; they are often combined or modified, as in drunkenness or even dying.

This man had not the symptoms of complete compression of the brain; he was conscious, as I told you, of pain, and his pupils were contracted, not dilated.

Upon examining the internal surface of the calvaria, we find more injury of the inner table than of the outer. This is almost invariably the case, and it may be laid down as a rule, that the extent of injury to the external table is no index of the extent of the injury to the internal table.

The fracture extends to the base of the skull, and through the petrous portion of the temporal bone. Under the pia mater there is great effusion. The structure of the brain appears to be normal, except in one place, where there is a contusion.

Concussion of the brain is theoretically a result of violent jarring of the brain, but this jarring may be so violent as to produce an absolute rupture or tearing of the brain substance, producing, as in the present case, under the anterior lobes of the brain, an actual contusion.

The patient died a few hours after admission.

Injury to the Skull.—This case was described in one of the earlier numbers of the *REPORTER*.

It may be remembered, from the fact that the patient is a child of about five years of age, who had been thrown down and trodden upon by a mule, the outline of the hoof being stamped into the flesh and bone of the child's head.

The entire extent of the soft covering of the skull, included within the arc of the wound, has completely sloughed away, exposing, in ghastly hideousness, almost the entire parietal and frontal bones upon the left side. Even the periosteum has sloughed, leaving the dead, dry bone. Along the coronal suture healthy granulations have sprung up, illustrating most forcibly the reparative efforts that nature often makes.

In connection with this case, Dr. N. remarked, that in wounds of the scalp, as a general rule, there is not such a great tendency to slough as in other portions of the body; even where almost the entire

scalp has been torn off, and but a small attachment remains—we may hope to preserve the part.

In regard to the final result in this case, there is great uncertainty—the external table of the left parietal bone must come away.

Diseases of the Scrotum.—I shall now show you several cases of disease involving the scrotum. When I say scrotum, I mean all that is included from the skin to the centre of the testicle.

Case 1st. There is a swelling on one side of the scrotum. Patient entered the hospital some time ago for hydrocele. He was tapped, and after the fluid had been drawn off, this enlarged testicle was noticed.

There are many kinds of enlargement of the testicle; we have gonorrhœal, syphilitic, scrofulous and cancerous enlargement of this organ.

Upon questioning the patient, we find that he has had a chancre, and that the other testicle has been affected in the same way as the one which we are examining. Now syphilitic enlargement attacks both testicles, one after the other; and though there may be great swelling, we seldom have suppuration. We have here very probably syphilitic sarsocœle, that is a fleshy tumor of a syphilitic nature.

Case 2d.—Without going through a differential diagnosis, we may state that this is a case of hydrocele. It is often stated that a hydrocele can be distinguished from a hernia by the swelling occurring in the lower portion of the scrotum in the former, and at the upper in the latter, but in this case we have the swelling at the upper portion of the scrotum, the testicle being plainly discernable at the lower—not surrounded by any fluid. The history of the case will explain this anomaly; he has been already tapped, and the operation for the radical cure performed, but with partial success only—adhesions having formed at the dependant portion of the sac between the tunica vaginalis testis and the testicle.

The operation of tapping was now performed. After the fluid is drawn off, it is a good rule to examine into the condition of the testicle and spermatic cord. These being in a healthy condition, the operation for the radical cure may be attempted.

We inject into the scrotum of this man a mixture of one part of tincture of iodine and two parts of alcohol.

Case 3d.—Enlarged testicle—probably syphilitic.

Syphilitic Eruption.—This form of syphilis is necessarily connected with an impregnation of the system by the disease.

Upon examining the person of this man, we see a number of red spots covered by minute scales. Eight weeks ago he had a chancre. It is a practical

point to know how soon to look for secondary symptoms. Eight weeks is about the usual time.

He has had no sore throat. I ask this inasmuch as the surfaces—meaning thereby the skin and mucous membranes are the usual places where we look for secondary syphilis.

Treatment.—All that we say at present is, that the iodide of potassium is indicated with perhaps warm bathing. If other manifestations of disease occur, the treatment will be modified accordingly.

Medical Societies.

NORTHERN MEDICAL ASSOCIATION OF PHILADELPHIA.

FRIDAY EVENING, Dec. 10th.

Dr. Maybury, presiding.

*Subject for Discussion—THE EMPLOYMENT OF NITRATE
OF SILVER IN AFFECTIONS OF THE THROAT.*

DR. CURTIS opened the debate by reading a paper, from which we abstract the following:

According to Dr. Chapman, in his therapeutics, published in 1825, the nitrate of silver had been used as an internal remedy, even in very early times, but the harshness of its action caused it to fall into disuse. The doses formerly prescribed were much larger than the majority of physicians would consider safe at present. Some even went as high as one scruple in 24 hours.

The action of this remedy upon the tissues, whether in health or disease, differs much, according to different and various writers. Some regard it merely as a stimulant; others as a sedative; others as a tonic. This difference in the views of its action proves that further study of it must be resorted to, in order that we may assign it to its proper place in the *materia medica*.

But few monographs have been published upon this subject, either at home or abroad, though much has appeared in the journals, which would show that it is regarded with interest.

Among those who have given their views to the world, we might mention Dr. H. Green, of N. Y.; Dr. Powell, late of London, who highly extols its internal use in the form of pill; and Dr. Watson, of Glasgow, whose particular object was to explain the rationale of its action when locally applied.

When applied to a mucous membrane, it acts chemically, throwing down a whitish tough precipitate, forming a coating on the membrane beneath. Dr. Watson says: "In erosion and ulceration of the mucous membrane, this deposit of whitish matter is thickened by coagulation of the albumen of the

liquor sanguinis, which transudes from the vessels, and thus protection is afforded to the delicate and inflamed parts beneath." He considers it of great value as a local remedy in all cases of chronic or sub-acute inflammation of the mucous membrane of the throat. The therapeutic effect which follows the stimulation produced in the vessels of the parts by the application of the argentine solution, Dr. W. explains by the action of that remedy on the different degrees and stages of that inflammatory process which is artificially produced in the web of a frog's foot, as observed under a microscope. Thus, when a red hot needle is passed through the web, the following phenomena are observed. A spot in the centre of the inflamed part is sphacelated, or destroyed by the passage of the needle through it; a circle around the spot is usually found in a state of complete congestion, the vessels being dilated, and the corpuscles almost perfectly stationary within them; while, in the parts beyond this circle, the vessels are not so much dilated, and the stasis of their contents is not so complete. The stream of blood is seen passing slowly away with the collateral circulation of the unaffected parts of the web. Now these two circles represent two degrees of inflammation, which it is important to distinguish wherever they occur, and especially when the seat of morbid action is in the mucous membrane of the larynx or trachea. That part of the frog's foot in which the stasis is complete, represents the most intense or athenie degree; the other, in which the stasis is more imperfect, represents the sub-acute or chronic variety. The effect of the solution on each of these parts is markedly different. In the part which is most intensely inflamed, the solution in the direct ratio of its strength increases the stasis of the blood within the vessels, which seem unable to dilate further, and are therefore but little changed; but the caustic acts through the coats of the vessels, upon the blood, by causing its partial coagulation, and also, by withdrawing water from the serum for the crystals which begin to form if the solution is strong. On the other hand, in that part of the web which had been less intensely inflamed, the solution causes a renewed and increased dilatation of the vessels, and the retarded current moves in them more freely than before, a cure being thus speedily effected if the exciting cause of the inflammation has ceased to act.

From these experiments, Dr. Watson concludes that the stimulant action is beneficial in all cases of inflammation, except the most acute, and that a strong solution not only stimulates the vessels, but tends, as in different varieties of oedema, to remove the watery parts of their contents on the laws of endosmose and exosmose. He also thinks that many cases of the sub-acute are much more improved by it, by first having the inflammation

checked. He used a weaker solution than is recommended by most writers—say from 12 to 30 grains to the fluid ounce of water. Many think that his weak solution acts as a stimulant, while the stronger one acts as a sedative by the chemical changes which it produces.

Dr. Bennet, of Edinburgh, in his work on Pulmonary Tuberculosis, declares the action of this remedy not to be that of a stimulant, but rather that of a sedative.

Another writer, Dr. Scott Alison, expresses the opinion, that when applied to an acutely inflamed part, its action is that of an irritant, and the morbid condition will be aggravated. To a part affected with chronic inflammation, he says, it is a tonic and stimulant. Applied to a membrane which has been for some time the seat of excessive and unhealthy secretion, it corrects and abates it.

Dr. Hastings says, in the treatment of acute laryngitis, a solution of nitrate of silver may be employed with advantage, and, unsmeared, will often remove the disease, but the case must be seen early.

If the inflammation has extended, he would not advise its use, for, although a small spot of acute or sthenic inflammation may be successfully treated in this way, yet a larger surface is irritated and made worse by it. In chronic inflammation of the different parts of the throat, he considers it one of the most important remedies that we possess. In croup, it was first employed by Bretonneau as early as 1818; he carried over the aryteno-epiglottic ligaments several times daily, a sponge charged either with pure chlorohydric acid or a solution of nitrate of silver. There appears to be a great difference of opinion in regard to the practicability of its use in croup. But few of the English writers seem to have used it in this disease.

Dr. Watson employs it, and considers it of great benefit in the pre-exudative stage, or before any exudation of the false membrane has occurred, but thinks it is injurious after that point.

Dr. Ware, of Boston, in his work on the History and Diagnosis of Croup, recommends it in the highest terms.

Dr. Green, of N. Y., also considers it highly efficacious in all inflammatory diseases of the throat.

Dr. Ware, having met with the usual success in the treatment of this disease, by the ordinary method, subsequently adopted a plan, in which the treatment consisted in the absence of all reducing and disturbing remedies, keeping the patient under the influence of opium and calomel; with constant application of warmth and moisture to the neck, and mercurial liniment; constant inhalation of watery vapor, and the local application of the nitrate of silver, early.

In a subsequent paper, he says: "I am well satisfied, from what I have now seen of this method

of treating croup, as compared with that which has been generally followed for so many years, that it has the advantages pointed out in a preceding paper;" and adds that it is a disease which he would treat without depletion, except, perhaps, by a few leeches. He would trust to opiates, perhaps to calomel, emollients, and the local application of nitrate of silver.

Hooping cough is another form of disease, which has been treated with this remedy.

Prof. Watson, of Glasgow, first treated it thus, and read a paper on this subject before the Medical Society of that city, in 1849.

M. Jaubert, of France, has treated this disease with the nitrate of silver with great success.

In regard to the pathology of the cough, Dr. Watson thinks the morbid agent, whatever it may be, commences its operation by producing inflammation of the pharyngo-laryngeal mucous membrane, and secondarily, irritation of the pneumogastric nerve. The following account is given of his own and of M. Jaubert's cases, treated thus, amounting to 184, of which 86 were cured within two weeks, and 40 within three or four weeks, while 8 resisted the treatment.

In 1854 Dr. Watson, during an epidemic of this disease in Glasgow, treated 167 cases in this manner, of which, 96, or about 54 per cent., were cured in two weeks, and 61, or 36 per cent., in three or four weeks; 9 resisted it, and died.

The percentage of deaths from this disease in London, is in the proportion of 8 to 9 among females, and 6 to 2 among males, to the deaths from all other causes, under the age of 10 years. This success in the treatment is, therefore, remarkable, and recommends itself to the favorable consideration of every one.

The nitrate of silver has been very generally used by the practitioners of this vicinity in all of the inflammatory diseases of the throat, but as far as I can ascertain, though they still use it, they have been disappointed in the results.

My own experience agrees with that of those whom I have cited. I believe it to be of great value in the treatment of chronic inflammation or ulceration of the mucous membrane. But in acute or aethiic inflammation, I believe it to be an irritant, and very injurious in its application to a part thus affected, tending to increase its degree and extent.

Dr. Jos. R. BRYAN remarked that he had used this remedy with much success, especially in those cases of croup, which follow after pharyngitis; and in cases where ulceration existed, with a deposition, together with all those croupy symptoms which so often result fatally. The caustic seems to produce a healthy action in the parts, but he was afraid that in some conditions accelerated death, either from its own action, or the struggles of the child. Still, he

used it in all affections of the throat; thus, in tonsillitis, he employed a solution of a 3as. to the ounce of water, which seemed to check the progress of the inflammation. He considered its action purely that of an astringent. He should employ it not only in the acute, but also in the chronic form, as he had never seen any direct evil effects, except in cases of pseudo-membranous croup in a moribund state. In whooping-cough, if applied to the larynx, it might have a good effect, though he was prejudiced against it in this disease, in consequence of a case which occurred in his own family, where he attempted to introduce it into the larynx, failed, and a violent inflammation of the lungs ensued, which had almost proved fatal.

Dr. WOODWARD had not had sufficient experience to be positive upon the subject, but, as germain to it, and a matter of interest, he would mention a case of acute tonsillitis, in which, when applying this solution, he found, and dislodged a calculus of carbonate of lime and mucus, the size of a chestnut. The case soon recovered after this foreign body had been removed.

Dr. WITTIG had frequently used the remedy in affections, such as cancrum oris, and malignant sore throat, with great benefit. In inflammation, it seemed to increase the severity of the attack.

Dr. MAYBURY had been using it for a number of years quite extensively, and generally with good effects in the several inflammatory affections of the throat, both in their acute and chronic forms. He had also attempted its introduction in croup. In whooping-cough he had never employed it. In acute tonsillitis and pharyngitis, and what is usually called follicular pharyngitis, and in chronic laryngitis he had often employed it with decided advantage. His own throat on one occasion being inflamed and excessively irritable, having the appearance of a piece of raw beef, and accompanied with a distressing cough, he had used it with the effect of producing a speedy cure after other treatment had failed. Its application was always followed by a very soothing sensation in the parts, and an amelioration of the cough. He had not been so successful in all instances, in entering the larynx as Dr. H. Green and others, but he was satisfied that it could be done. He generally employed a globular piece of sponge fastened to a rod of whalebone curved, as recommended by Dr. Green, to correspond with a segment of a circle whose diameter is 4 inches. He bent it to this precise shape by means of a block. He considered it not always necessary to enter the larynx as it afforded much relief even when applied to the epiglottis cartilage, and around it. In cases where there was a tendency to tubercular deposition in the lungs supervening the primary throat disease, he had seen these applications check its progress, and arrest the further develop-

ment of tubercles, certainly for a time. This was the opinion also of Dr. Green, and, he believed, of some European authorities. He usually employed the crystals in solution of four different strengths: $\text{Dj. } \frac{3}{ss}$, $\text{Dij. } \frac{3}{ss}$, and $\text{Zj. } \frac{3}{ss}$ to the ounce, and repeated the application every day, every two, three, or four days, or even at intervals of a week or two weeks.

DR. BRYAN said there was another form of acute inflammatory action, in which it is of much service, this is the anginoform of scarlet fever. He never knew death to occur after its application to the throat at an early stage. It may even be thrown up the posterior nares in such cases, with much advantage. He thought much of the bad effects were the result of the *mode* of its application. There were three modes, in which it was applied, the brush, the sponge, and the swab, or a piece of muslin attached to a piece of whalebone. These differed much, in their manner of touching the surface. He used a camel's hair brush. In very irritable cases, we cannot use the friction with either of the others, that we can with this. An objection to the swab is, that there is generally a great quantity of linen used, but rarely, are the sharp points of the stich entirely covered, and these are extremely liable to injure the parts.

DR. SLOCUM, in his own case, when attacked with inflammation of the fauces, has had it applied with a brush, and much of the solution got into the larynx on one occasion, causing him a great deal of suffering. At the next application, more care was taken, and he was entirely cured eventually. He would suggest that the patient should be directed to take a full inspiration, and then apply the solution. In this way, should any get inside the larynx, the expiration which immediately follows would throw it out, and the patient would feel more comfortable. He found several calculi in his own throat, from the size of a pea down to that of a pin's head. These generally disappear spontaneously. He had at present a case under treatment with ulcerated fauces, which had given him great trouble for the last three months. At first, it was simply an ulcer of the side of the soft palate, with the half arches on each side. He applied the nitrate of silver, directed a soothing gargle, and iodide of potassium in small doses. She scrubbed for a living, and thus was much exposed; she would get better, and then have a fresh attack. He substituted the chlorate of potassa for the iodide for the last two months; used a decoction of marsh rosemary, and applied the caustic every other day. At present, the uvula is almost completely destroyed, and there is but little improvement of the fauces. He inquired for a specific cause, but she knew of none.

DR. BRYAN had obtained from Dr. Hatfield a formula, which had answered nicely, where he had

failed with the other applications. It was a mixture containing:

Cupri sulphat. $\frac{3}{ss}$.
Pulv. cinchon. $\frac{3}{ss}$.
Aque calcis, $\frac{f}{3}iv$.

DR. HATFIELD had used the combination as given by Dr. Bryan, with much success, particularly after he had failed with the nitrate of silver, and also in cases of *cancrum oris*. He most generally, however, depended upon the caustic solution, and preferred it in cases of chronic, or those of more recent inflammation. In *croup*, he had employed the nitrate of silver, but with doubtful results. Perhaps it was not the remedy so much as the method of applying it. In cases of chronic tonsilitis, and similar affections, he used it with great confidence, even in the solid form, often relying upon a single touch, it not being necessary to touch the whole surface.

DR. RHEIN, in his own case of chronic bronchitis, with which he had been troubled for 18 years, a cough coming on each winter and lasting till spring, with spasmodic breathing, had employed the various expectorants without any beneficial results. He had then used this caustic, and obtained entire relief as soon as it ran down the larynx. The symptoms were more speedily relieved *thus* than when he merely *touched* the throat. He often used it in *croup*, laryngitis, &c., employing a probang armed with a large sponge well saturated with the solution, introduced between the epiglottis and rema glottidis. A spasm occurs, the sponge is compressed, and the solution runs down. He had no confidence in the statements of its being introduced into the larynx.

DR. WITTRIG remarked that when inflammation had existed for some time, and there remains swelling and tenderness, with a congested state of the parts, or perhaps a weakness, allowing a stasis of the blood, he had employed it with great benefit. When the cough in phthisis had produced great irritation, he had obtained good effects from it, but not in every instance. In erysipelatous affections of the fauces, also, it has been successfully used. He considered that it acts by constriction, and the recession of the epidermis beneath its coating of the solution.

DR. MAYBERRY agreed with Dr. Hatfield, that it was not always necessary to apply it over the entire diseased surface, as it was diffusible in its sedative efforts over portions that were not touched; yet he generally tried to get it over as much of the diseased mucous membrane as possible, both up into the posterior nares and down into the larynx, if necessary. Hence he preferred the curved probang, as described before, to the camel-hair pencil. In its introduction he mostly observed the precaution suggested by Dr. Slocum, yet in many instances it might be beneficial to get a few drops into the wind-pipe. He

differed decidedly with Dr. Rhein, and believed that Dr. Green and others had thus introduced it. He was present on one occasion, soon after graduation, while the views of Dr. Green were somewhat novel, when a gentleman of this city had, unquestionably, performed the operation successfully before a large class of students, and he felt satisfied that he had done so himself, repeatedly, since. There was, however, a great popular prejudice against its use; evils are attributed to it which he did not understand how it could possibly produce, and some persons absolutely refuse to allow its application. He had heard even a distinguished writer and practitioner, of this city, whose opinion and experience on every subject possess much weight amongst us, assert very positively that he could cure any case of inflammation of the throat, provided nitrate of silver had not been applied. With his own (the speaker's) views of its action, when applied to mucous surfaces, he could not conceive how a case could become less curable after, than it was before its application. In his hands it had succeeded after other remedies had failed; but, of course, not invariably. He always applied it himself, without trusting to the attendant, especially where a strong solution was used. In scarlet fever he had also derived decided benefit from it, not only from its own peculiar therapeutic action on the parts, but also from the effort which it provokes of expelling the secretions which often collect in the fauces and air passages. He had often observed one tonsil alone inflamed, without the other being at all affected, and also the calcareous deposits, especially in hypertrophy of the tonsils.

Dr. SHAPLEIGH considered the making of the probang a point of great importance. If carelessly made, the sponge may come off. He had known the probang to be carried into the larynx, but a failure often occurred at first. The throat seemed to require education, prior to this use of the instrument. A very ingenious way to examine the epiglottis is to tickle the fauces at the back part, which will cause the epiglottis to come into view. A case in his own family had been under treatment, some two or three years ago, which eventually proved fatal. The patient at first could not swallow any fluid; it was only by soaking a cracker or something in the fluid that he was enabled to get the necessary drink. The epiglottis was split, and ulcerated in the middle, as if a V shaped piece had been removed. He applied, every other day, a strong solution of the nitrate of silver within the larynx, with much improvement in a short time. The patient could drink without trouble, his voice was much improved, and he was getting on finely, when one day he took a long walk when an east wind was blowing, and all his worst symptoms returned. He was three days

without swallowing either food or fluid. Dr. H. H. Smith saw him in consultation, and passed a stomach tube, by which food was thrown into the stomach, but the spasmodic action was so great as to cause the rejection of the matter thus introduced. He got, however, in this manner, some milk, and next day had improved so much as to be again able to swallow. He was, however, again attacked after another careless exposure, inflammation of the lungs supervened, and death ensued, though not from the disease of the throat. Dr. S. had never used a syringe with a perforated extremity, but thought it preferable when we desired to pass the solution into the posterior nares. The objection to the brush is, that we cannot apply so much of the article by it, as it drains off. However, patients often prefer it, as the sponge presents a formidable appearance. In some instances, with him, this remedy failed to produce any benefit; in one case he applied it, perhaps, 150 times, and finally cured the patient, after many physicians of high reputation had declared a cure impossible. When the case was an old one, and the patient weak, he found tonics very serviceable. He would prefer not to have his patients use muffers to the throat, because, sometimes, going out without them, they are sure to take cold.

DR. RHEIN thought the remedy had its evil as well as beneficial effects. In scarlet fever, some years ago, he had employed it. Throat disease having come on, with a free mucous discharge, he applied a solution twice a day; the discharge increased, and death ensued. He had often thought that the remedy was the cause of this increase of the secretion of tenacious mucus, and thus of the death of the child from its air passages being stopped up by this accumulation.

Dr. CURTIS considered that in chronic inflammation of the throat, there was perhaps no remedy so good as this, especially where ulceration existed. He had used it in acute cases, but would hesitate in again employing it in such instances. He had treated acute tonsilitis thus, and believed it had produced irritation. He was more willing to abandon it, as he had a remedy which he thought far better. This was

Zinci sulphat. gr. xx-xxx.
Aqua, fʒi.

which we had never known to fail. In any acute inflammation of a mucous passage, it was more likely to cure, though but few think of employing it. In scarlet fever it is doubtless good, unless there was a tendency to ulceration.

Scarification of the tonsils is of great benefit in scarlet fever, where they are much inflamed without a tendency to ulceration.

Adjourned.

Editorial.

In this number we commence the publication of a series of articles on *Regional Anatomy* in its relations to *Medicine and Surgery*, to be fully illustrated by wood-cuts. We feel confident that this will prove to be one of the most important series of medical and surgical papers that have ever been published in this country. The author is well known to the profession as a ripe scholar and an able surgeon and anatomist, and one who performs any work he undertakes, *well*. We commend these articles to the attention of our readers, and trust that they may be suggestive to some of them of facts or ideas, with which they may be induced to enrich our pages.

THE QUARANTINE QUESTION.

The New York Legislature, after bestowing more time and losing more temper on the subject than upon any other that has come before it during the present session, has finally, by a vote of ninety-nine to nine in the House, passed the bill for the removal of Quarantine. It is understood that the bill will meet with no opposition in the Senate. This bill provides for the sale of the present Quarantine grounds on Staten Island in June, 1860, and also forbids the bringing of yellow fever patients, or yellow fever vessels, above the Narrows from the present time.

This would seem to necessitate the adoption of the plan proposed by Dr. Anderson to the Commissioners of Emigration, in a letter which we published in a previous number, in which the floating hospital, for yellow fever patients, was advocated, together with an anchorage for yellow fever vessels near Sandy Hook—as the bill, while it breaks up the present anchorage and removes the hospitals, does not provide for the establishment elsewhere. The introducer of the bill was obliged to accept the amendments of the members of the adjoining counties of Long Island, stipulating that the fever hospital

should not be placed within their borders. While they were quite willing that they should remain in the thickly populated village of Tompkinsville, within an half hour's sail of New York, and daily visited by from five to ten thousand persons from the city; they stoutly resisted the idea of placing them upon the barren sand bar of Coney Island, uninhabited, and with which there is no public communication. Unless the floating hospital is adopted then, the problem which the Legislature has to solve is—How to remove the Quarantine, and place it nowhere. The easiest escape from this dilemma would be to abolish it altogether.

That the Quarantine could have existed so long in its present locality, without introducing disease into the City of New York, would prove it to have been unnecessary. The first idea of Quarantine is perfect isolation. Here was nothing of the sort. Its whole management appears to have been a sham. If infected vessels had been permitted to go directly to the city, the number of persons exposed to their influence would have been infinitely less than were directly brought in contact with them in the locality in which they were concentrated. Rather than be responsible for the continuance of a system, which has given rise to the axiom, "yellow fever on Staten Island is yellow fever in New York," we think the wisest thing the Legislature can do is to abolish all its quarantine laws, and leave it for the Quarantine Convention, which will hold its next session in New York in May next, to frame a code of quarantine and sanitary laws, which shall be in accordance with science and a due regard for the interests of commerce.

THE CONVENTION OF MEDICAL TEACHERS AT LOUISVILLE.

In compliance with a resolution adopted at the meeting of the American Medical Association at Washington City in May last, a call has been issued for a convention of professors representing the various medical colleges of the United States. This meeting is to con-

vene at Louisville on the second of May, the day preceding the meeting of the American Medical Association at the same place. The convention is to take into consideration the report of the special committee on Medical Education, made at Washington last year by Dr. James R. Wood of New York, in view of "devising a uniform system of medical education."

This is the great desideratum in medical education in our country, but how any degree of uniformity is to be obtained, is a question which in our view is capable of but one solution. With all our confidence in the desire of the professional teachers of our country as individuals, to elevate the standard of medical education, we very much doubt whether they can agree upon a uniform system of instruction and requirements. The known rivalry and conflicting interests of the schools, the constant chartering of new institutions by our State Legislatures, taken in connection with the almost entire neglect of preceptors to require any qualifications of students who enter their offices, preclude the idea, it seems to us, that the proposed convention can fix on any uniform standard of medical education which the colleges will consider as binding on them.

In our view there is but one method of securing anything like a uniform standard of medical acquirements, and that must be sought *outside of the schools*. It must be in the hands and under the control of the profession *in its National capacity* through the only organization of the kind in our country, viz.:—the American Medical Association. Our views on this subject will be before the Association for action at its next meeting, in the form of a series of resolutions from the Medical Society of New Jersey. Dr. Wood, in his Report before referred to, recommends Boards of Examiners, independent of the schools, but without proposing any plan for their appointment. We *hope* that the Convention of Teachers will, on examining into this matter, see the necessity of securing some degree of uniformity by favoring the New Jersey resolutions, and thus practically carry out the recommendations of the able Report which will come under their consideration.

In this connection, we would call the attention of our readers to the letter from Chicago, contained in our last week's number, referring to the formation, in that city, of a new medical school, on a plan somewhat different from that which prevails in the colleges of our country. The plan has some features that strongly recommend it to the favorable notice of the profession, but as we expect ere long to hear more from our correspondent on the subject, we forbear further comment at the present time. We doubt not that the present plan will be brought to the attention of the Convention of Teachers, whose deliberations, we trust, will tend to advance the general interests of the profession.

Mr. Ivan C. Michels will soon commence the publication, in this city, of a semi-monthly, to be entitled the "*Druggists' Review and Chemical Times*." It will, as its name indicates, be especially devoted to the interests of the chemist and druggist. As our country readers are often under the necessity of being their own chemists and druggists, we would commend this paper to their favorable notice.

Medical News.

The New York State Senate has *confirmed* the nominations of Drs. Gunn, of New York, for Health Officer, and Jerome, of Trumansville, for Resident Physician at the Marine Hospital.

A telegraphic despatch from Harrisburg announces that the Governor of this State has signed the bill entitled "a supplement to an act incorporating the city of Philadelphia, abolishing the Board of Guardians of the Poor and the Board of Health."

Agassiz having proposed to deposit his large zoological collection in a museum for the use of the public, provided such an institution should be established, steps have been taken to found such a museum on a most liberal scale.

Re-interment of the Remains of John Hunter.—The *European Times* says: "The members of the medical profession will be glad to learn that the Dean and Chapter of Westminster have given permission to the Royal College of Surgeons of England to re-inter the remains of John Hunter in the Abbey. The body will be privately removed from the vault of St. Martin's-in-the-Fields, and the President, Vice Presidents and Council of the College, the learned and scientific societies of London, and such members of the profession as have provided themselves with tickets, will meet in the Jerusalem Chamber and accompany the body to the place of interment, on Monday the 28th inst., at 4 o'clock in the afternoon.

"A list of subscribers for a statue to Hunter has been opened at the College of Surgeons, and already about two hundred guineas have been received. Mr. South, one of the Vice Presidents, has consented to act as honorary secretary."

At Antwerp a scientific and industrial expedition is being organized for a voyage round the world. A vessel has been chartered and is being fitted up for the accommodation of passengers. The price of passage for the whole voyage is about eight hundred dollars.

The United Service Gazette says: "A human being measures more within twenty or thirty minutes after rising than at any other period of the day. Our informant states that he has seen men who were rejected the previous day, after lodging near the barracks, walk into the orderly room of the regiment, hot and steaming from their beds, get measured and passed as being the proper height. He explains the cause of this by stating that the system is more relaxed at that time."

From a recent official report it appears that pulmonary affections, including phthisis, cause nearly one-fourth of the annual mortality of England. Phthisis or consumption proper kills, on the average, in England alone, more than fifty thousand persons a year.

An English paper says that a telegraphic dispatch from Marseilles brings the astounding intelligence that one hundred and fifty thousand men had in one month died of cholera at Jeddo, the beautiful city of Japan, which, according to recent accounts, is a model of cleanliness and sanitary perfection.

A correspondent of the *London Times* says that the remains of Harvey, the discoverer of the circulation of the blood, were pointed out to him where they rest in a vault, with others of the family, including Admiral Harvey, the companion of Nelson, in a vault under the church of Hempstead, near Saffron Walden, in Essex.

MARRIAGES.

LEE—HALE.—At New York, on the 5th inst., by the Rt. Rev. Alfred Lee, Bishop of Delaware, Benjamin Lee, M. D., and Emma Hale, daughter of Norman White, of that city.

DEATHS.

BECK.—At Rome, in Italy, on the 18th day of February, 1859, Charles Frederick Beck, M. D., of the city of Philadelphia.

DE ROSSET.—At Wilmington, N. C., April 1st, Dr. Armand J. De Rosset, Sen., aged 92 years.

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REFERENCES.

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Henry H. Smith, M. D., Professor of Surgery, University of Pennsylvania.

H. L. Hodge, M. D., Professor of Obstetrics, University of Pennsylvania.

Samuel D. Gross, M. D., Professor of Surgery, Jefferson Medical College.

Joseph Pancoast, M. D., Professor of Anatomy, Jefferson Medical College.

S. Littell, M. D., Surgeon Will's Hospital.

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